

# BUSINESS CONDITIONS

A REVIEW BY THE FEDERAL RESERVE BANK OF CHICAGO

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# Livestock and Feeds Face Readjustment — I

## Wartime and Current Price Policies Shape Output

American housewives unable to obtain meats, a part of the world's population hungry or starving, and prospects for the situation degenerating further before it improves have led to much criticism of the national food situation and a myriad of proposed solutions to the problem.

### DEMANDS SWELLED IN WAR YEARS

The World War II period was characterized by tremendous increases in demand for meat, dairy, and poultry products and a great increase in the volume of such products produced. Military requirements increased with expansion of all branches of the armed forces, and this country was called on to aid in provisioning our allies. Military and other non-civilian uses of meat increased from about 6 per cent of total production in 1941 to 27 per cent in 1943, and about 23 per cent in 1945. Thus, about one-fourth of the meat produced during the latter war years was not available for civilian consumers. Non-civilian demands on the supply of *all* foods increased from 2 to 3 per cent in prewar years to a peak level of 21 per cent in 1943 and may total 11 per cent in 1946.

Coincident with the large military and lend-lease demands for meats and other livestock products, civilian demand for these commodities increased sharply during the war years as incomes increased. Per capita income payments averaged about \$520 during the five-year period, 1935-39. By 1944 income payments had more than doubled, amounting to \$1,134 per capita, with a level of about \$1,150 indicated for 1945. Information on consumption of meats and other livestock products reveals that demand for these food items increases quite sharply with increases in income.

It was the sum of these increases in demand—military, foreign, and civilian—outpacing increases in production which exerted the upward pressure on prices, with which everyone is familiar, and necessitated ceilings on meat and other livestock commodities. Thus a gap developed between the supply of meats available to civilians and the volume of meats desired by them at the established prices. Estimates of demand compared to supply indicate this gap increased during the war years from about 5 pounds per capita in 1942 to 20 pounds in 1943 and 1944 and advanced further to 30 pounds in 1945.<sup>1</sup>

### FEED RESERVES DRAINED

Meat production increased from slightly over 16 billion pounds (dressed weight), 1935-39 annual average, to nearly 25 billion pounds in 1944, and in 1945 totaled almost 23 billion pounds. Milk production increased from an average

annual volume, 1935-39, of 104 billion pounds to a record level of 122 billion pounds in 1945. Egg production averaged 3.3 billion dozens during the 1935-39 period and increased to 5.3 billion dozens in 1944, then declined to 5.1 billion dozens in 1945. Such increases in volume of livestock products were possible only because of large inventories of feeds and large annual production of feed crops during the war period.

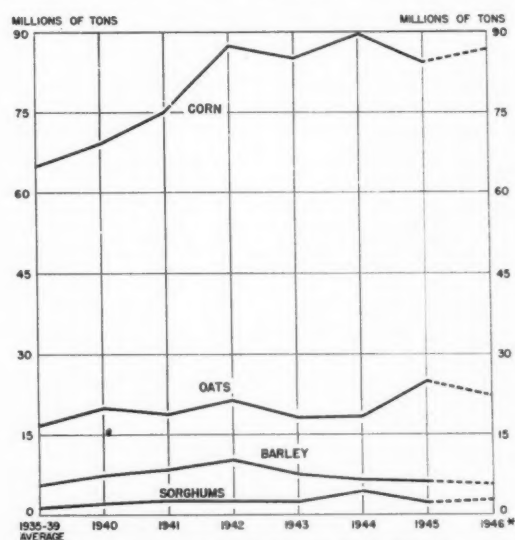
July 1 stocks of wheat were at the high level of 623 million bushels in 1942 but decreased during the three years following to 281 million bushels on July 1, 1945. The adoption of price policies which encouraged the use of wheat for livestock feed permitted increased production of livestock products during this period. The amount of wheat used for feed reached a peak of 487 million bushels in the year ending July 1, 1944, compared to a "normal" use for this purpose of about 120 million bushels. Approximately 200 million bushels may be fed during the year ending July 1, 1946. It is estimated that July 1 stocks this year will be unusually low, less than 100 million bushels.

October 1 stocks of corn reached a peak level of 688 million bushels in 1940 and had declined to 311 million bushels in 1945, largely because of heavy feeding of increased numbers of livestock. October 1 stocks this year may be reduced to less than 100 million bushels.

The most important factor permitting a large increase in production of livestock products was the increased produc-

(Continued on Inside Back Cover)

PRODUCTION OF FEED GRAINS, UNITED STATES



\* ESTIMATED ON BASIS OF AVERAGE YIELDS FOR RECENT YEARS AND ACREAGES INDICATED BY FARMERS MARCH 1 PLANTING INTENTIONS.  
SOURCE: U. S. DEPARTMENT OF AGRICULTURE

<sup>1</sup>Livestock and Wool Situation, U. S. Department of Agriculture, July 1945, p. 15.

# Credit Re-emerges as Spending Factor

*Instalment and Charge Account Buying Rise Since V-J Day*

The accelerated increase in consumer credit in the Seventh Federal Reserve District and the nation since the end of the war with Japan marks the re-emergence of credit as a highly important factor in the financing of consumer expenditures. The sharper rate of growth of consumer credit relative to total consumer expenditures, moreover, indicates that the consuming public is beginning to rely more upon credit in making their purchases than at any time since the Pearl Harbor attack.

The postwar expansion of 1.7 billion dollars in consumer credit in the nation through April 1946 brought the total outstanding to 7.5 billion dollars, or roughly equal to the 1939 level. This increase, the largest for any seven months' period during the sixteen years in which such data have been collected, was shared by all the major types of consumer credit. Sales credit accounted for nearly one billion dollars of the over-all gain, and cash loans the remainder. Of the sales credit growth, charge accounts unexpectedly comprised more than two-thirds, and instalment sales credit less than one-third. A significant fraction of the observed post V-J Day increase in general cash spending, moreover, has been made possible by the more than 650 million-dollar gain in

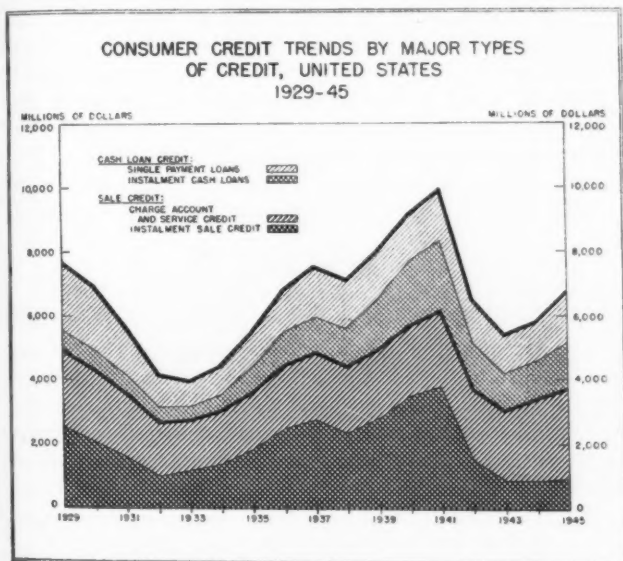
single payment and instalment cash loans. The accompanying chart illustrates these trends and a footnote thereto gives the distinctions between the principal types of consumer credit mentioned. Unless otherwise specified, all data pertain to amounts outstanding.

The most important factors contributing to the recent absolute growth of consumer credit have been increased production and price advances of goods. With respect to the soft goods lines, the reasons for the expansion of consumer credit at a greater rate than total consumer spending at the present time are to be found primarily in the reduced real income of those consumers for whom prices have increased faster than incomes, temporary losses in take-home pay resulting from work stoppages, noticeable depletion by some consumers of their wartime savings, and some general tendency for prewar cash-credit spending habits to be re-established. The failure of production of most consumers' durable goods to reach expected levels by the spring of 1946 clearly has been the principal factor restraining the rise in instalment credit since the end of the war. This is particularly true of automobiles and household appliances which before the war comprised more than two-thirds of instalment sales credit.

Consumer credit continues to be an important inflationary force in the present-day economy which is characterized by goods shortages and abnormally large spending power in the hands of many consumers. Occurring in a period in which the supply of goods remains insufficient for the absorption of current incomes plus the liquid savings accumulated during the war, the consumer credit expansion since V-J Day has aggravated the problem of inflation control. Credit buyers have entered the market for scarce goods in competition with cash buyers, adding to the substantial inflationary pressure exerted by the incomes and the savings of the cash buyers. While the total supply of currency and bank deposits has not yet been materially affected by the present consumer credit expansion, funds have been transferred from the idle balances of consumer credit agencies to the active balances of consumers, and thus have circulated more rapidly. The result has been upward pressure on prices, since the output of goods in recent months has not been, nor for the immediate future likely will be, increased in any important way by consumer credit expansion.

Two factors partially offset this credit expansion. First, for some consumers, credit has replaced rather than supplemented cash inasmuch as they have preferred to borrow to buy durable goods rather than to use cash savings or liquidate war bonds and other investments. Second, competition with the borrowed balances of credit buyers has enforced idleness on the cash balances of other people who would otherwise have bought the same goods for cash.

The immediate outlook for consumer credit necessarily depends upon the level and pattern of production and price



**Single payment loans**—loans extended by financing agencies to consumers for a wide variety of purposes and repayable in one lump sum.

**Instalment cash loans**—loans extended by financing agencies to consumers and repayable in instalments, usually monthly. Principal items financed are consumers' durable goods, unusual personal expenses, and consolidation of previously existing debt.

**Charge or open account credit**—credit extended as an integral part of a retail sale and commonly repayable in one lump sum, usually within three months.

**Service credit**—credit extended for professional and other services rendered to consumers and repayable in one lump sum or in instalments. The lump sum method of repayment predominates.

**Instalment sale credit**—credit extended as an integral part of a retail credit sale and repayable in instalments, usually monthly. Credit sales of consumers' goods account for the bulk of this type of credit.

developments. It is anticipated, however, that the economic transition to peace will continue to be marked by further sharp rises in consumer credit. Given continued increases in production, particularly of durable goods at existing prices, the 1941 prewar peak of consumer credit outstanding of 10 billion dollars may well be exceeded in 1947. Once the transition is accomplished and the abnormal accumulated demands of consumers have been satisfied, the level of consumer credit outstanding in the nation is expected to be substantially above the prewar level. With full employment conditions, a price level at least as high as the one now existing, and a return by consumers to their prewar spending-saving patterns, the new consumer credit level will be 50 per cent or more above that existing before the war.

#### PREWAR AND WARTIME TRENDS

Prior to the outbreak of war, when shortages of goods were not a problem, the level of consumer credit outstanding was largely determined by consumer disposable income and consumer expenditures. When consumer credit outstanding expanded 30 per cent, from 1929 to 1941, the pattern of the movement of these two series was very close, as the accompanying chart shows. After the most depressed years of the prewar decade, consumer credit gradually increased in importance in total consumer spending, particularly because of the relative growth of consumers' durable goods which were largely credit financed. A good deal of variation occurred, however, in the 1929-41 trends of the principal types of consumer credit. While total instalment credit outstanding was advancing 87 per cent, lump-sum or non-instalment credit actually declined 11 per cent. As a result of these diverse trends the 3 to 2 ratio of lump-sum payment to instalment credit which existed in 1929 was reversed by 1941.

Within the instalment credit group, cash loans outstanding increased 235 per cent compared with an 87 per cent gain in sales credit. Underlying both of these increases was the expansion in sales of consumers' durable goods. In the case of cash instalment loans an added factor was the marked tendency among banks to shift from single payment to instalment loans. Within the non-instalment credit group, the volume of charge accounts outstanding in 1941 remained practically unchanged from the 1929 level, but single payment loans fell about 25 per cent.

Despite the continued and substantial growth of consumer expenditures during the war, several factors forced a contraction of over 50 per cent in consumer credit outstanding between the end of 1941 and the summer of 1943 when the wartime decline ended. These included wartime shortages of consumers' durable goods, war bond savings drives, and consumer credit control as exercised through Regulation W of the Federal Reserve System.

The most precipitous declines occurred in instalment credit outstanding, instalment sale credit falling 80 per cent and instalment cash loans 51 per cent. These losses were due primarily to the close dependence of instalment credit upon the availability of consumers' durable goods, the production of which was curtailed during the war. Instalment sale credit is devoted almost exclusively to the sale of such

goods, and thus suffered more than instalment loans, which are also devoted to a number of other uses such as the purchase of soft goods, the meeting of unusual expenses, and the payment of previously existing debt. Non-instalment credit, less dependent on durable goods, withstood the shock of the war much better; charge account credit and single payment loans outstanding declined 30 and 15 per cent, respectively, while service credit outstanding actually experienced a slight rise.

While increased consumer incomes and expenditures normally result in an expanded demand for consumer credit, as indicated, this relationship was interrupted during the war. In addition to scarcities of goods, at least two other important factors diverted a substantial proportion of the increased incomes into cash expenditures and savings, namely, wartime appeals by the Government to save money and to pay off debt and the issuance of Regulation W designed to discourage the use of credit. The shorter maturities required by Regulation W, moreover, expedited collections and thereby reduced the amount of credit outstanding. This effect was particularly noticeable on charge account credit, but was not without influence in the instalment sphere.

The level of consumer credit outstanding fluctuated within comparatively narrow limits between the summer of 1943 and the following spring. This is evidence of the bringing into equilibrium of the downward pull on consumer credit of scarcities of durable goods, Regulation W, and wartime savings drives, on the one hand, and the upward pull on consumer credit of the continued rise in consumer disposable incomes and expenditures, on the other. The parallel rise of 13.5 per cent in both consumer credit and consumer expenditures between the spring of 1944 and the month following V-J Day foreshadows the return of consumer disposable income-expenditures as the major over-all factor in determining the level of consumer credit outstanding. The function of wartime control in this period was to prevent consumer credit from resuming a substantial upward trend.

#### POST V-J CREDIT RISES SHARPLY

Since V-J Day, consumer credit outstanding has increased at a faster rate than consumer expenditures. The 22 per cent national increase in consumer credit between September 1945 and March 1946 was greater than the 16 per cent rise in consumer expenditures. This accelerated rate of increase in consumer credit since the end of the war has occurred in spite of the unusually heavy cash purchases of limited supplies of consumers' durable goods. Lump-sum payment credit, in short, has remained the dominant element in shaping recent over-all consumer credit trends.

The most striking credit gains since V-J Day have occurred in charge account outstandings which have advanced more than 35 per cent in the nation and approximately the same amount in the Seventh District. These increases have been contributed not only by the general postwar expansion in consumer expenditures but also by the relative shift from cash to credit purchases as existing charge accounts have been used more extensively and many new accounts have been opened. Among department stores in the principal

cities of the Seventh Federal Reserve District this postwar shift from cash to open account sales has been evident, with the latter rising from 27 per cent of total sales in September 1945 to 30 per cent in March 1946.

Instalment sales credit has increased at least 26 per cent since the end of the war. This compares with a rise in overall consumer expenditures for durable goods of more than 47 per cent, however, and emphasizes the abnormally heavy cash purchases of such goods. Increased cash spending reflects both the use of accumulated savings and the marked postwar tendency for consumers to save less from current income than during the war years. In addition, some of this expansion in cash purchases has been made possible by the 25 per cent postwar gain in instalment cash loans.

For the total volume of consumer credit to reach and exceed its prewar level, instalment-financed expenditures for durable goods, at present prices, must increase for a time at a faster rate than total expenditures for these goods. This situation can be expected as automobiles and household appliances, which normally account for more than two-thirds of instalment sales, become available in increasing quantities.

The Seventh Federal Reserve District, comprising most

of Indiana, Illinois, Michigan, and Wisconsin, and all of Iowa, regularly accounts for roughly 15 per cent of the national total of consumer credit outstanding. Unfortunately, data for the District are not sufficiently complete to afford continuous measures of over-all consumer credit, but a few partial indicators provide a basis for some generalizations about the pattern of consumer credit in the District relative to the nation.

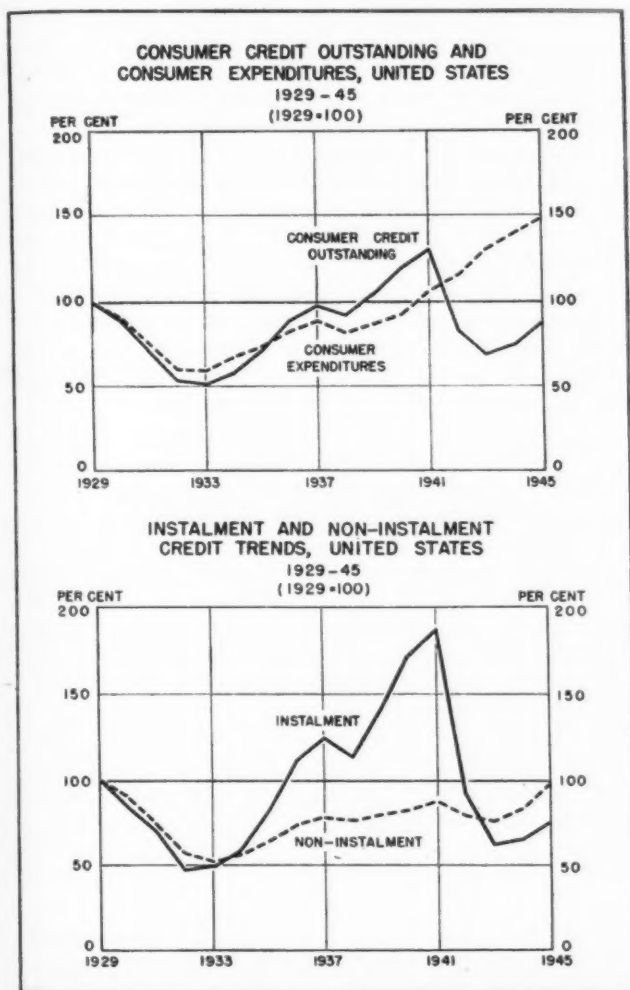
While the similarities in consumer credit trends between the Seventh District and the nation far outweigh the dissimilarities, certain significant differences are nevertheless apparent. Available data on sales finance company and bank holdings of instalment paper and on registrants under Regulation W reveal a distinct tendency for instalment sales and related financing to be relatively more important in this District than in the nation generally. The Seventh District is the center of the durable goods producing industries of the nation and has a higher-than-average consumption of these same goods. In addition, the District has a relatively higher proportion of urban residents than the nation, a condition which has come to mean not only relatively greater use of consumers' durable goods, but also somewhat more extensive reliance upon instalment financing.

Considerable evidence, extending back well into the prewar period, reveals that charge account sales comprise a strikingly smaller percentage of total sales in this District than in the nation generally. This difference is particularly apparent in the case of department stores. In March 1946, for example, charge account sales comprised only 30 per cent of total reporting department store sales in the Seventh District, compared with 37 per cent for all reporting department stores throughout the United States.

#### INFLATIONARY PRESSURES CONTINUE

The large idle credit resources present in the economy are more than sufficient to absorb any consumer credit demand which can now be anticipated. This excessive supply of credit has already had the effect of stimulating competition among lenders, particularly for the profitable instalment credit business. Competition promises to be further intensified by the decision of many commercial bankers to seek an end to the present dominance of sales finance companies in the instalment sale credit field and to expand the banks' already substantial entry into the instalment cash loan field. This coming competitive struggle, to be discussed in a forthcoming article in *Business Conditions*, has many implications for the consumer credit field and for business in general.

Such competition clearly will add to the already great upward pressures on the amount of credit outstanding not only by persuading more consumers to buy on credit but also, even now within the limits of Regulation W, by reducing down payments and lengthening maturities on the credit extended. Until the supplies of durable goods, particularly automobiles and household appliances, have been produced in sufficient quantities to meet the wartime accumulated demand, inflationary pressures will continue intense. Unlimited uses of consumer credit obviously would aggravate an already acute situation.



# Retail Credit Expanded in 1945

*Continued Rise in Consumer Buying Indicated by Survey*

On the basis of the annual retail credit survey conducted by the Federal Reserve Bank of Chicago there is no indication that war-established buying habits of consumers in the Seventh Federal Reserve District were altered during 1945. This year's survey covered almost 1,600 establishments in nine principal credit-granting lines of trade with a total volume of sales exceeding 1.1 billion dollars. These firms reported an expansion in total sales volume which averaged approximately 11 per cent above 1944 levels and reflected increases for each of the reporting groups. This expansion was attributable to moderate but rather general price increases during 1945 and to a continuation of the tendency for upgrading of merchandise as well as to sustained consumer demand for goods which were in increasing supply.

The most substantial sales gains were reported by businesses which were severely affected by shortages during the war, particularly in the consumers' durable goods fields where items which have long been in demand began to reappear on the market during the latter part of the year. Household appliance stores, for example, showed the most spectacular gains. Sales in this group were up 40 per cent, compared with a 20 per cent decline for 1944. Automobile dealers also showed an increase in sales of approximately 12 per cent. Sales in men's clothing stores were expanded almost 15 per cent, while women's apparel stores showed a 12 per cent gain, continuing the tendency which was apparent throughout the war period. Furniture stores and department stores reported increases in the neighborhood of 10 per cent, being influenced both by higher ceiling prices and by the demand for better-grade merchandise.

## CASH TRANSACTIONS DOMINANT

There was little change in the pattern of sales by type of transaction. The major portion of the increase in total sales was attributable to cash transactions, as is apparent from the accompanying chart. The wartime shift from credit to cash sales was particularly marked during 1945 for men's clothing stores, where cash sales were 22 per cent higher and credit sales slightly lower than for the previous year.

Increases in cash transactions were substantial even in those lines in which sales are typically on credit terms, e.g., in household appliance and automobile dealer groups. In these two categories more than half of total sales were made for cash; and in all lines except household appliance, cash sales represented an increasing portion of total sales as compared with 1944. To some extent this tendency reflected the fact that a large portion of purchases in these fields were of smaller household items and of supplementary lines which were stocked in the absence of normal inventories of high-cost durable goods.

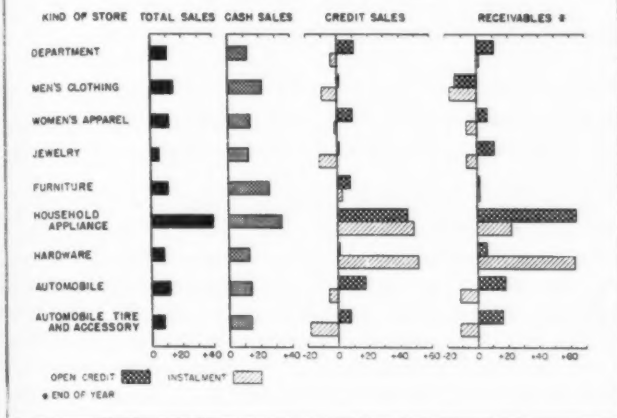
Credit sales—principally open credit sales—also were expanded during 1945, although their growth was relatively smaller than that of cash sales except for household appliance stores and automobile dealers. Furniture dealers reported instalment sales amounting to 49 per cent of total sales for the year but, because of the much greater expansion in cash sales, they represented a smaller portion of the total. Instalment transactions of automobile dealers continued to fall despite the rise in total sales, but the decline was at a much lower rate than in 1944.

**SELECTED RATIOS AND CHANGES IN NET WORKING CAPITAL  
SEVENTH FEDERAL RESERVE DISTRICT, 1944-45**

Kind of Business	Current Assets to Current Liabilities		Cash and Bank Deposits to Current Liabilities		Inventories <sup>1</sup> to Receivables		Sales to Receivables		Sales to Inventories <sup>2</sup>		Per Cent Change in Net Working Capital
	1945	1944	1945	1944	1945	1944	1945	1944	1945	1944	
Department stores .....	2.3	2.2	0.6	0.5	1.6	1.8	17.3	17.0	6.6	5.8	+7.0
Men's clothing stores.....	3.0	3.0	1.3	1.0	1.4	1.8	17.6	13.2	7.7	4.8	+5.2
Women's apparel stores....	3.0	2.8	1.0	0.8	1.2	1.3	14.8	14.1	7.3	6.6	+17.9
Jewelry stores .....	4.8	4.6	1.3	1.3	2.1	1.7	9.2	8.7	2.2	2.5	+7.7
Furniture stores .....	5.5	5.5	1.1	0.9	1.0	1.0	6.1	5.5	3.4	3.3	+8.6
Household appliance stores..	6.8	8.4	2.4	2.9	2.5	3.2	11.2	11.8	4.1	3.4	+15.1
Hardware stores .....	8.3	8.0	1.7	1.8	3.8	4.0	17.6	17.6	3.1	3.1	+9.4
Automobile dealers .....	3.4	4.1	1.4	1.3	2.5	3.0	23.5	23.4	6.2	5.4	+9.1
Automobile tire and accessory stores .....	3.5	3.7	1.0	1.0	1.8	1.7	14.6	14.8	6.0	7.0	+15.9

<sup>1</sup>Inventories at cost. <sup>2</sup>Inventories at retail. Note: Balance sheet items as of December 31 each year.

# PERCENTAGE CHANGES IN SALES AND RECEIVABLES, 1944-45 SEVENTH FEDERAL RESERVE DISTRICT



## RECEIVABLES HIGHER

Total receivables, including accounts and notes receivable, kept pace with the expansion in credit sales during 1945. End-of-year balances were higher than for the previous year in all groups of stores except men's clothing and jewelry stores. Again, the most important gains were reported by household appliance firms, at which receivables rose 48 per cent. Charge account receivables accounted for the major part of the rise in credit outstanding in most lines of trade. Although hardware stores showed a large percentage increase in instalment sales, the proportion of instalment to total sales and of instalment receivables to total receivables remained relatively negligible.

Most lines of business showed evidence of even shorter collection periods than were reported for 1944, as measured by the sales-to-receivables ratios. These and other significant ratios are shown in the accompanying table.

The decline in end-of-year stocks, at retail value, amounted to only 1 per cent for all lines of business taken together, but there were considerable variations among the various trade groups. Only three groups—department stores, automobile dealers, and men's clothing stores—showed reductions in inventories. The most drastic decline was reported by men's clothing stores where stocks were down 28 per cent, reflecting severe shortages of supply combined with substantial increases in consumer demand. Inventory turnover—the sales-to-stocks ratio—for these stores rose from 4.8 to 7.7 from 1944 to 1945. Other trade groups reported some expansion in stocks which varied from 1 per cent for women's apparel stores to 28 per cent for automobile tire and accessory dealers. The sharp rise in stocks of the latter group reflected, in part, action by the Office of Defense Transportation in making parts available and the diversification of merchandise by many establishments. While household appliance firms showed an expansion of 12 per cent in stocks, the actual amounts represented only a minor accumulation of inventories over their depleted status at the close of 1944. Jewelry and automobile tire and accessory stores were the only two groups to show lower stock turnover rates and higher in-

ventory-to-receivables ratios, reflecting largely their higher year-end inventory levels.

Stocks as well as sales undoubtedly reflected price increases, but the effects of this factor on year-end inventories may have been largely offset by the below-average level of post-holiday stocks.

## CURRENT ASSETS EXPANDED

The tendency toward extreme liquidity which prevailed throughout the war period was again apparent during 1945 as dealers maintained themselves in a position to replenish their inventories at the earliest opportunity. Current assets at the end of the year were higher than at the previous year-end for every type of business represented in the survey. A large portion of this expansion was in the form of cash and Government securities, except for household appliance and automobile tire and accessory establishments.

Current ratios—current assets to current liabilities—were somewhat higher than for 1944 in six out of the nine lines of trade. The three exceptions were in the durable goods lines—household appliance, automobile dealers, and automobile tire and accessory groups—where these ratios have been abnormally high during the war. Current liabilities also were expanded in all lines except department stores, where indebtedness to banks was reduced by 46 per cent. Household appliance stores showed a 47 per cent increase in current liabilities, which was reflected in a drop in the current ratio of this group from 8.4 to 6.8 per cent. The expansion in current liabilities for most of the trade groups was mainly in trade payables.

In contrast with 1944, the rate of increase of cash and bank deposits during 1945 was much greater than that of Government securities. The large accumulation of cash may be attributed in part to the anticipation of increased supplies of merchandise after the end of the year. Cash and bank deposits alone were sufficient to liquidate current liabilities for all lines of trade except department stores. Household appliance firms reported cash holdings equivalent to almost half of their total current assets, while automobile dealers showed a 49 per cent increase in cash over the period, partly as a result of customer pre-payments on new cars.

All types of businesses covered by the survey reported gains in net working capital, ranging from 5 per cent for men's clothing stores to 18 per cent for women's apparel stores. This development, together with the improved liquidity ratios, seems to indicate that the reporting firms are in even better financial position than at the end of 1944.

A pamphlet containing the detailed results of the 1945 Seventh District Retail Credit Survey, including data for the District and principal cities and trade areas, may be obtained on request to the Research Department, Federal Reserve Bank of Chicago, Box 834, Chicago 90, Illinois.

The annual analysis of Department Store Sales by Departments, based on the operations of a selected sample of stores in the Seventh District during 1944-45, is also available in pamphlet form. In addition to District figures, this study includes data for the cities of Chicago, Detroit, Indianapolis, and Milwaukee.

# Measuring National Income and Product

## *Government, Business Focus More Attention upon Over-all Economic Trends*

Recent and continuing work stoppages in the Seventh Federal Reserve District and the nation have re-emphasized the interdependence of virtually all economic activities, and reflected the far-reaching effects of external economic conditions upon the operations of individual firms. Widespread recognition in government and business planning of the close and influential over-all relationships within and between industry, commerce, agriculture, and government, however, has been comparatively recent, probably extending back not much earlier than the prewar decade. As the significance of general business activity for individual concerns has become more widely appreciated, certain measures of the income and product of the nation have been developed and applied in public and private business planning. The series most widely used are known as: income payments, disposable income, national income, and gross national product.

Because an increasing number of important private as well as public decisions have come to be based upon the current or anticipated levels of one or more of these measures, it is important to understand their meaning, uses, and principal limitations. Otherwise, instead of becoming a useful aid to business and government policy, they may only contribute confusion and misunderstanding.

### DEVELOPMENT OF BUSINESS MEASURES

In discussing the trend and prospects of business and employment, analysts for many years relied primarily on what were called "barometers"—measures of important segments of activity, such as bank debits, steel ingot production, or freight car loadings. During the past 15 or 20 years, however, attention has been shifting from these business barometers or indicators to direct measures of over-all business activity which were not available previously. National income data have been published regularly only since the post 1929 depression, and national product data only since the pre-Pearl Harbor defense program.

National income and product series have enabled their users to observe and stress inter-relationships between the various segments of the economy in a way which barometers do not do. They also have the advantage of measuring directly the variables which the barometers actually reflect indirectly. Their widest use to date has come from Government agencies and endowed economic research institutions. Private business has found them increasingly helpful primarily in market research and in relating the movement of individual companies to entire industries and to general business. Utilization has been slower in private business than elsewhere, however, partly because income and product figures are difficult to compute and appear less promptly than some "barometric" series, partly because they have not yet

been broken down adequately on a geographical basis, but primarily because of their apparent complexity and multiplicity.

Some confusion is almost inevitable between and among the multitude of statistical series purporting to measure over-all national economic activity: income payments, disposable income, national income, and gross national product. Why and how do they differ, what is each good for, what are their relative magnitudes? These are very relevant and timely questions. Furthermore, there are at least two complete sets of estimates: the "official" series published regularly by the United States Department of Commerce, and the more complex adjustments published at intervals by the National Bureau of Economic Research. These two sets have diverged during the war years. In addition to the best known series, there exist additional individual series and modifications prepared by other agencies and individuals.<sup>1</sup>

### MAJOR OVER-ALL SERIES LISTED

Since it is not possible to list and reconcile all the series in the compass of a short article, attention will be concentrated on the several official series published by the United States Department of Commerce, which are best known, most up-to-date, and most widely used.

**Income Payments** is the simplest of these series, although neither the largest nor the smallest in dollar terms. It is also the only one now broken down annually by states and is therefore uniquely useful for local market research purposes. Income payments comprise all payments to individuals, earned or unearned, other than proceeds from the sale of capital assets. All payments by governments are included, even direct relief and gratuitous allowances to servicemen and their families. Income earned but not distributed (corporate savings) is excluded.

**Disposable Income** is obtained from income payments by subtracting personal taxes (primarily income taxes). It is even more useful than income payments proper for problems of market research and general consumer spending analysis because it is net of tax obligations.

**National Income**, which comprises the total earnings of labor and capital employed in the productive process, differs from income payments by being income *earned* rather than income *distributed*. It can be computed from income payments by adding net undistributed corporate savings and payments to social security funds, while subtracting social security benefits and such unearned income as relief and pensions. Under most circumstances, with corporations adding to their savings and with social security funds accumu-

<sup>1</sup>A comprehensive discussion of these and other related series is contained in a monograph by Marvin Hoffenberg of the U. S. Bureau of Labor Statistics, published in the *Review of Economic Statistics* for May 1943.

TABLE 1  
COMPONENTS OF MAJOR NATIONAL INCOME AND  
PRODUCT SERIES, 1945

(In billions of dollars)

INCOME PAYMENTS	
Salaries and wages.....	110.2
Direct and other relief.....	1.0
Dividends and interest.....	12.2
Entrepreneurial income and net rents and royalties .....	29.7
Other income payments (mainly service allowances and allotments).....	7.6
Total—Income Payments .....	160.7
FROM INCOME PAYMENTS TO NATIONAL INCOME	
Income Payments .....	160.7
Corporate savings .....	4.5
Contributions to social insurance funds.....	3.8
Deduct transfer payments.....	-8.1
Total—Net National Income.....	161.0
FROM NATIONAL INCOME TO GROSS NATIONAL PRODUCT	
Net National Income.....	161.0
Business tax and nontax liabilities.....	28.6
Depreciation and depletion charges.....	8.2
Other business reserves.....	0.5
Current outlay charged to capital expense.....	1.1
Inventory revaluation adjustment.....	1
Adjustment for discrepancies.....	-2.0
Total—Gross National Product.....	197.3
GROSS NATIONAL EXPENDITURE	
Consumers' goods and services.....	104.9
Private gross capital formation:	
Residential construction .....	0.8
Other construction .....	1.9
Producers' durable equipment.....	6.4
Net changes in business inventories.....	1
Net exports of goods and services.....	0.4
Net exports and monetary use of gold and silver.....	-0.1
Total—Private capital .....	9.4
Government expenditures for goods and services:	
Federal Government—	
War .....	69.0
Other .....	6.1
Total—Federal .....	75.1
State and local government.....	7.9
Total—Government expenditures .....	83.0
Total—Gross National Expenditure.....	197.3

<sup>1</sup>Less than 50 million.

Note: Figures do not necessarily add to totals because of rounding.

SOURCE: U. S. Department of Commerce, *Survey of Current Business*, February 1946, pp. 7, 8, 32.

lating surpluses, national income is somewhat larger than income payments. During severe depressions, corporations may impinge on reserves to continue dividends, social security funds may operate at a deficit, and relief payments may rise, with the result that income payments may exceed national income, as they did during the early 'thirties. Large servicemen's allowances produced the same effect in the last quarter of 1945.

**Gross National Product** (GNP) includes all components of national income; to these it adds business taxes, expenditures for capital maintenance, and certain minor items. Since men are employed equally well in maintaining capital as in creating new income, this series has been found to correlate more closely with employment data than does national income. Gross national product is a new series, developed during the war to determine the maximum output of the nation allowing for the postponement of capital replacements. The addition of depreciation allowances—the lack of provision for capital maintenance—makes the concept "gross"; it is, therefore, necessarily larger than national income. The inclusion of business taxes has been attacked as "double counting" and may be discontinued in the future.

#### STRIKING A BALANCE

What one man receives in income someone else must pay him—an employer, a customer, a tenant, or a concern in which he has invested. The same is true for any corporate body. In the aggregate, for all "persons" natural and corporate, total income can be shown to equal total outgo. This is true of both gross and net income, but is much easier to show at the former level, where it is expressed:

Gross National Product=Gross National Expenditure.

**Gross National Expenditure** is in theory gross national product under another name. In practice, it is computed independently by adding expenditure statistics, and there is usually a small unexplained discrepancy.

Gross national expenditures are grouped under three heads: consumer expenditures, private capital formation, and Government expenditures. The three are largely self-explanatory, although the private capital formation figures, which are broken down in Table 1 under the heading "Gross National Expenditure," include items not generally considered "business expenditure" or "investment."

#### AN ARITHMETICAL EXAMPLE—1945

To make the relations concrete between the several income concepts, attention is directed to the data for the calendar year 1945 shown in Table 1. The first figure considered is income payments at 160.7 billion dollars, made up as shown in the first section of the table, entitled "Income Payments." Income and other personal tax and non-tax liabilities in 1945 amounted to 21.0 billions, reducing disposable income to 139.7 billions. Addition to income payments of corporate savings and contributions to social security funds overbalance the deduction of "transfer" income, meaning income unearned or earned in previous years. When applied to the income payments figure of 160.7 bil-

lions these adjustments give a net national income of 161.0 billions, as shown in the section of Table 1 entitled "From Income Payments to National Income."

From this figure gross national product is obtained by addition of depreciation, business taxes, and several smaller items detailed in Table 1 under the heading "From National Income to Gross National Product." The "adjustment for discrepancies" in this section is required to bring the total into line with the gross national expenditure figure for 1945, which added to 197.3 billions. This is shown in the section of the table entitled "Gross National Expenditure."

A still briefer summary is given in Table 2, which interrelates the basic U. S. Department of Commerce series.

#### A FEW PITFALLS INDICATED

The foregoing discussion has established specific differences between these several series. It follows that the series should not be used interchangeably, as is sometimes done. Income payments refer solely to incomes received by individuals. Disposable income is income payments net of taxes. National income represents net income earned, whether distributed or not, after allowance for capital maintenance. Gross national product, which equals gross national expenditure, includes business taxes and makes no allowance for maintaining capital.

All of these series are published on a total current dollar basis, without adjustment for price or population changes. They may be more safely used as time series if deflated to a fixed-price and per capita basis.

None of the national income or product series measures national economic welfare. They do not do so in their published form, at current prices, nor even when deflated for price changes and placed on a per capita basis, as suggested above, since relative valuation of all the items is as currently carried on in the economy. A dollar's worth of opium or gunpowder contributes as much to the statistical totals as a dollar's worth of bread or milk. Capital gains are purposely excluded, although they add to individuals' economic power and well-being. National income and national product, then, are not national economic welfare. It is only hoped that they move roughly together.

National income and national product statistics are not easy to interpret by analysts of primarily local or regional business conditions. Some analysts may fall into the error of ignoring the national picture entirely, and forget the relationships between national and local conditions. Others may be led into the opposite exaggeration, a fatalistic notion of national conditions as determining local ones so unilaterally as to make local efforts useless. Such a viewpoint overlooks the arithmetical facts that the national economy is the sum of local ones and that individual local areas may be sufficiently large or critically located to affect the national totals.

On the statistical side, the only estimates not based to some extent on samples are those for government expenditures. The others are, therefore, imperfectly precise, and too much weight should not be given to small fluctuations. Many figures are subject to frequent minor revisions as im-

TABLE 2  
INTER-RELATIONS BETWEEN MAJOR NATIONAL  
INCOME AND PRODUCT SERIES, 1945  
(In billions of dollars)

Gross National Product (or Expenditure) .....	197.3
Deduct business taxes, depreciation, etc.....	-36.3
Equals Net National Income.....	161.0
Adjust for corporate saving, social security, and transfer payments.....	— 0.3
Equals Income Payments to Individuals.....	160.7
Deduct personal taxes, etc.....	-21.0
Equals Disposable Income of Individuals.....	139.7

SOURCE: U. S. Department of Commerce, *Survey of Current Business*, February 1946, pp. 7, 8, 32.

proved data become available. They are weakest in dealing with unincorporated business and agriculture, and strongest in dealing with corporate or public agencies. Finally, all are subject to certain statistical fallacies. Whichever series one uses, it remains true, for example, that national income (or product) falls when a man marries his housekeeper, since a housekeeper's paid services enter into the computation while a wife's unpaid ones do not.

#### THE OUTLOOK FOR 1946

Preliminary figures for the first quarter of 1946 indicate a gross national product running at an annual rate of approximately 180 billion dollars at current prices, with income payments somewhat below 160 billions. These figures represent maintenance of money values as of the last quarter of 1945 (immediately following V-J Day). Price advances suggest that they represent a smaller physical total, but the decline of war spending clearly points to an increase in peacetime output. The 180 billion-dollar figure is more than double the prewar (1939) gross national product of 88.6 billion dollars, but approximately 15 per cent below the wartime quarterly peak annual rate of 206.3 billions reached during the second quarter of last year. Current forecasts for the entire year 1946 range somewhat above first quarter levels, though results may vary sharply in either direction, depending on the degree of inflation and the extent of work stoppages during the remainder of the year.

Among the more widely publicized of the recent uses of gross national product statistics has been the establishment of estimated target figures for stable full employment. A gross national product of 180 billion dollars at current prices for 1946 would be only slightly below these "goals," which critics have attacked as too high. These figures, which average in the neighborhood of 180 billions for 1947 and 200 billions for a larger labor force in 1950, have been computed chiefly at 1943-44 prices, and are larger at the current price level. A summary and comparison of a number of the full-employment target estimates will appear in an early issue of *Business Conditions*.

## LIVESTOCK AND FEEDS

(Continued from Inside Front Cover)

tion of feed crops during the war years. Production of the four major feed grains—corn, oats, barley, and sorghums for grain—in 1945 totaled 118 million tons, exceeding the average annual production during the 1935-39 period by 33 per cent. The 1942 crops set a record—37 per cent above the five-year average. Comparing feed grain production during the most recent five-year period with average production during the decade of the 'twenties reveals a 14 per cent greater average annual production for the recent period. Corn dominates the feed grain picture, providing about 70 per cent of the total tonnage during recent years. Oats production was unusually large in 1945.

### HOG-CORN PRICE RATIOS KEPT FAVORABLE

In addition to large supplies of feed grains, the ratio of prices of feed grains to livestock and livestock products must be favorable to feeding if maximum production of these latter commodities is to be attained. Conspicuous among such ratios is the hog-corn ratio which is the number of bushels of corn equal in value to 100 pounds of live hog. The long-time (1924-43) hog-corn price ratio at Chicago averages 12. Ordinarily, a hog-corn price ratio higher than average encourages the feeding of hogs and results in increased numbers of hogs being raised. Also, it encourages the feeding of hogs to heavier weights thereby increasing meat production per hog. From April 1941 through November 1943 the hog-corn price ratio was well above the long-time average and encouraged a large increase in hog production. Currently, it is well below average. The number of pigs saved from the spring and fall pig crops of 1941 totaled 84.7 millions, increased to 104.5 millions in 1942, increased again to a record number of 121.8 millions in 1943,

and then declined to 86.8 millions in 1944 and 87.1 millions in 1945. The 1946 pig crop may total about 83 millions.

### CATTLE FEEDING NOT FAVORED

A significant consideration in the feeding of cattle is the beef steer-corn price ratio, the number of bushels of corn equal in value to 100 pounds of slaughter steer, live weight. Based on Chicago prices the long-time (1924-43) average beef steer-corn price ratio is 14.5. Throughout the period from 1938 through most of 1943 the beef steer-corn price ratio was above average. Since September 1943 this ratio has been below average.

The relatively less favorable feeding ratio for beef than for hogs should not be interpreted as an indication that consumers desired pork more than beef. This was a period of regulated prices, and it was considered desirable public policy during the war years to encourage the conversion of much of our large supply of feed grains into pork because hog numbers can be increased much more rapidly than cattle. Also, hogs are relatively efficient converters of grains to meat. This, of course, overlooks the importance of cattle in utilizing roughage not suitable for hog feeding. Pricing policies intentionally held the beef steer-corn price ratio at a relatively low level.

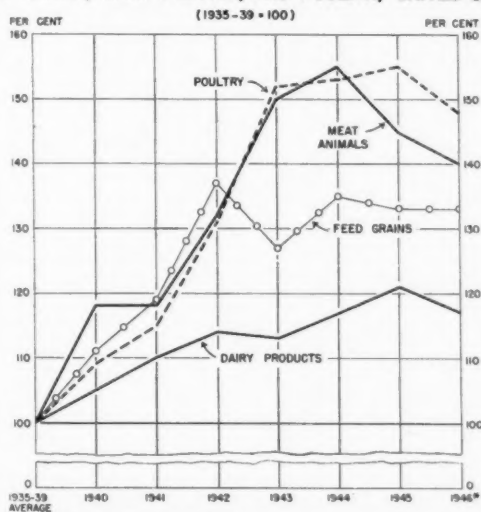
### DAIRY PRICE RATIOS FAVORED MILK

The amount of feed grains fed to dairy cows is influenced by the relationship between prices of dairy products and feeds. Since 1938 the milk-feed and butterfat-feed ratios have been above average, reaching their highest levels in 1945. Here again is seen the intent of public policy, through price controls, to influence feeding ratios and grain use. A favorable feeding ratio promoted a high level of milk production during the war.

The egg-feed price ratio—number of pounds of poultry feed equal in value to one dozen eggs—averaged 12.6 during the years 1934-43. For 1943 this ratio averaged 14.5, declined to 11.5 for 1944, and then increased to 13.5 for 1945. Currently, the egg-feed ratio is below average and will encourage a reduction in the amount of grain fed to chickens.

In general, prices of livestock and livestock products were maintained at levels relative to feed prices, which promoted a rapid conversion of feeds to livestock products during the war. This facilitated the rapid and marked increase in volume of production of these commodities. In fact, production increased sufficiently to supply military and export requirements of these commodities and still leave a larger per capita supply for civilians than during the prewar period, 1935-39. During the war years the per capita civilian supply of meats averaged 11.5 per cent more than during 1935-39. For poultry and eggs, the increase was 25.2 per cent while the milk equivalent of civilian supplies of all dairy products averaged the same as in the prewar period.

CHANGES IN VOLUME OF PRODUCTION OF DAIRY PRODUCTS, FEED GRAINS, MEAT ANIMALS, AND POULTRY, UNITED STATES



This is the first of two articles dealing with the livestock and feed situations. The second, covering current livestock developments and the future outlook, will appear in the August issue.

**SEVENTH FEDERAL**



**RESERVE DISTRICT**



